

2011

SUMMARY - AUSTRALIA

1. In 2011 there were: 337 donors, 14.9 donors per million population [dpmp] with 586 kidneys (including 13 double adult and three en bloc), (570 recipients), 199 livers (213 recipients), 66 hearts (including two heart/lungs), 306 lungs (145 double, two heart/lungs and twelve single lungs), 26 pancreas, nine pancreas islets (one combined with kidney) transplanted into recipients.
In addition there were 285 corneas, 61 sets of heart valves and 31 bone donations from these donors.
2. In 2011 there were 86 donations after cardiac death (DCD). Thirty two of these donations occurred in Victoria, 18 both in Queensland and New South Wales, eight in South Australia, seven in Western Australia, two in the Australian Capital Territory (ACT) and one in the Northern Territory.
3. The highest donor rate was in South Australia [21 dpmp], followed by Victoria [19 dpmp], the Northern Territory [17 dpmp], Queensland [15 dpmp], both the Australian Capital Territory (ACT) and Western Australia [14 dpmp], Tasmania [12 dpmp] and New South Wales [11 dpmp].
4. The mean age of donors was 47.8 years, median age 50.4 years with a range between 3.2 - 85.5 years.
5. In 2011, the major cause of death in 49% of donors was (CVA) cerebrovascular accident, while road trauma caused 11% of all donor deaths.
6. Donors with a known occupation (67%) were classified as students, pre-school, white and blue collar, management, professional, small business owner, primary industry and tradesperson. An additional 15% were retired, 8% unemployed, 5% home duties, 3% had a disability and 2% were unknown. The majority of donors were Caucasoid and their religion was recorded as Christian.
7. Authority for organ donation was sought in 197 (58%) of cases by the Intensive Care Clinician or Registrar, volunteered by the family in 123 (36%), by the Emergency Consultant, Registrar or other Physicians 15 (4%) and Nursing Staff and Donor Coordinators 2 (1%). Coronial inquiries were required in 141 (42%) of all donors.
8. The donation of more than one organ occurred in 240 (71%) of donors. The average number of organs transplanted per donor was 3.1.
9. The consent rate for specific organs were 99.7% of kidneys, 100% livers, 96% hearts, 99% lungs and 98% pancreas.
10. In 2011, from donors where organs had been retrieved, 96.8% of kidneys, 99.5% of livers, 100% of hearts, 99.4% of lungs and 46% of pancreas (26 pancreas and nine pancreas islets) were actually transplanted. The first combined kidney and pancreas islets transplant occurred in New South Wales in 2011.
11. Six whole livers and one (L) liver were sent to New Zealand for transplantation in 2011.

SUMMARY - NEW ZEALAND

1. In 2011 there were: 38 donors, 8.6 donors per million population [dpmp], which resulted in 65 kidneys (including four double adult), (61 recipients), 30 livers (30 recipients), twelve hearts, 26 lungs (13 double lungs) and three pancreas being transplanted into recipients. In addition 32 corneas and eleven sets of heart valves were sent to the tissue bank. There was no bone donation.
2. There were two donations after cardiac death (DCD) donors.
3. The mean age of donors was 40.2 years and median age 44.0 years, with an age range between 13.0 - 73.8 years.
4. Cerebrovascular accident (CVA) was the major cause of death in 50% of donors, while road trauma caused 16% of deaths in 2011.
5. Fifty three percent of donors with a known occupation were classified as students, white and blue collar workers, professional, management, primary industry and tradesperson.. An additional 37% were unknown and 10% (four donors) were retired or unemployed.
Thirty donors (79%) were Caucasoid, four (11%) were Pacific People, three (8%) Maori and one was Burmese.
The religion was unknown for 82% of donors.
6. Authority for organ donation was sought in 33 (87%) of cases by the Intensive Care Clinician, Registrar or other physician, and volunteered in five (13%) of cases.
Coronial inquiries were required in 16 (42%) of donors.
7. The donation of more than one organ occurred in 31 (82%) of donors. The average number of organs transplanted per donor was 3.1.
8. The consent rate for specific organs were 100% of kidneys, 100% of livers, 100% of hearts, 100% of lungs and 100% of pancreas.
9. In 2011, from donors where organs had been retrieved, 98% of kidneys, 100% of livers, 100% of hearts, 100% of lungs and 75% of pancreas were actually transplanted.
10. New Zealand has provided 23 kidneys, 229 livers, 28 hearts, one heart/lung and 108 lungs to the Australian Transplant programmes since 1989.
11. One liver, one heart and six lungs were sent from New Zealand to Australia for transplantation in 2011.

ORGAN DONORS IN AUSTRALIA AND NEW ZEALAND

Figure 1

Number of Donors** by Retrieval State ^(x) 2007 - 2011					
() Donors Per Million Population					
	2007	2008	2009	2010	2011
Queensland	39 (9)	48 (11)	47 (11)	49 (11)	67 (15)
New South Wales + *	53 (8+) (8*)	57 (8+) (8*)	68 (10+) (10*)	87 (12+) (12*)	77 (11+) (11*)
ACT + *	1 (2+) (3*)	5 (9+) (14.5*)	8 (14+) (23*)	10 (17+) (28*)	8 (14+) (22*)
Victoria	55 (11)	67 (13)	65 ^(x) (12)	98 ^(x) (18)	107 (19)
Tasmania	1 (2)	8 (16)	5 (10)	10 (20)	6 (12)
South Australia	27 (17)	43 (27)	33 (20)	31 (19)	35 (21)
Northern Territory	3 (14)	3 (14)	2 (9)	2 (9)	4 (17)
Western Australia	19 (9)	28 (13)	19 (8.5)	22 (10)	33 (14)
Australia	198 (9.4)	259 (12.1)	247 (11.3)	309 (13.8)	337 (14.9)
New Zealand	38 (9.0)	31 (7.3)	43 (10.0)	41 (9.4)	38 (8.6)

^(x) Refers to donors retrieved by retrieval State (ie Albury-NSW donors retrieved by Victoria)

+ NSW population excludes residents of the NSW Southern Area Health Service (included in ACT population)

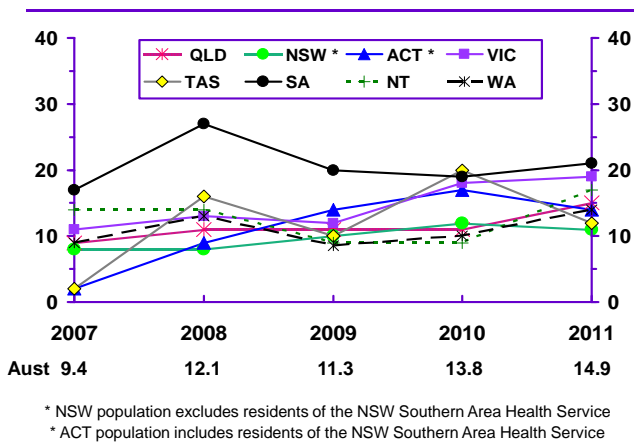
* NSW population includes residents of the NSW Southern Area Health Service (excluded from ACT population)

Medical services from the ACT service the NSW Southern Area Health Region. Population data—June ABS 3101.0

** This figure relates to the number of donors for whom the retrieval operation commenced for the purpose of transplantation. It includes donors who may have been deemed medically unsuitable at the time of surgery or after removal of organs.

Figure 2

Number of Donors Per Million Population
Australian States 2007 - 2011



Donor figures for Australia for 2011 include five donors who went to the operating theatre but organs or tissues were not retrieved. A further three donors had corneas only retrieved and transplanted.

Three donors had disease of organs, two were medically unsuitable, two were due to infection and one due to malignancy. One was a DCD donor.

Donor (dpmp) figures in Australia rose to 14.9 (dpmp) in 2011 from 13.8 (dpmp) in 2010 and 11.3 (dpmp) in 2009.

New Zealand had three donors who had no organs retrieved due to disease of those organs. One of those donated corneas only.

In 2011 there was a range between the States of 11 donors per million population (dpmp) in New South Wales to 21 (dpmp) in South Australia.

The ACT had 22 dpmp when the NSW Southern Area Health Service population was excluded.

Figure 3

International Donor Statistics 2011

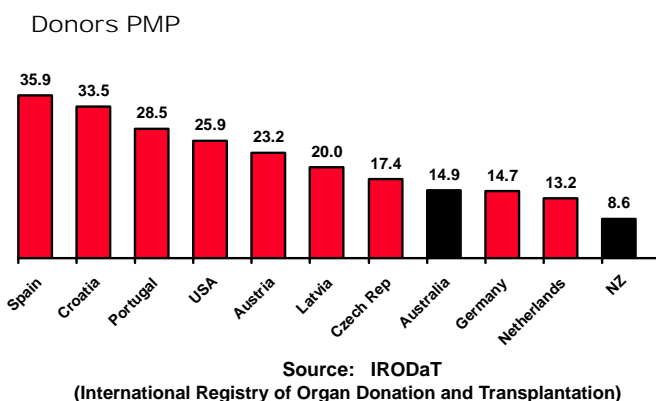


Figure 3 shows the number of donors per million population (dpmp) of Australia and New Zealand compared to other countries.

Note that the international definition of an organ donor is used for these comparisons (i.e. at least one organ is transplanted from that donor). This definition differs to that used in Figure 1 above.

Donor pmp for 2011 was not available for the UK, Canada and some other countries from the IRODaT web site at the time of publication.

Figure 4

Waiting List for Organs by Transplant Region 01-Jan-2012							
Organs	QLD	NSW/ACT	VIC/TAS	SA/NT	WA	AUST	NZ
Kidney	126	541	336	64	68	1135	458
Liver	35	52	51	14	11	163	24
Heart	8	27	20	-	8	63	13
Heart / Lung	2	3	1	-	-	6	-
Lung	11	33	38	-	11	93	13
Pancreas / Kidney	-	28	18	-	-	46	4
Pancreas Only	-	1	2	-	-	3	-
Pancreas Islets	-	3	3	1	-	7	-
Intestines (with liver)	-	-	2	-	-	2	-
Total	182	688	471	79	98	1518	512

Data provided by NOMS (National Organ Matching System), ANZ National Liver Transplant Registry, ANZ Cardiothoracic and the National Pancreas Registry (Westmead), A/Prof John Kanellis and A/Prof David Goodman (Pancreas-Victoria), A/Prof Toby Coates (Pancreas Islets-South Australia), Prof Bob Jones - Angela Li (Intestines) Victorian Liver Transplant Unit.

Figure 5

Transplanted Organs Donated in Australia and New Zealand by State of Transplantation 2011							
Organs	QLD	NSW	VIC	SA	WA	AUST	NZ
Kidneys (Total)	155	232	278	74	86	825	118
Deceased Donor	119	144	194	58	55	570	61
Live Donor * x	36 (23%)	88 (38%)	84 (30%)	16 (22%)	31 (36%)	255 (31%)	57 (48%)
Per Million []	[8]	[11]	[14]	[8]	[13]	[11]	[13]
Liver (Recipients)	42	70	54	25	16	207	36
Live Donor ++	1	1	-	-	-	2	8
Heart	10	24	22	-	9	65	11
Domino #	-	-	-	-	-	-	-
Heart / Lung bloc	1	1	-	-	-	2	-
Lung (Recipients)	23 double 0 single	43 double 2 single	70 double 8 single	-	12 double 2 single	160	10 double
Pancreas +	-	19	7	-	-	26	3
Pancreas Islets	-	4	4	1	-	9	-
Intestines	-	-	-	-	-	-	-
Total	232	396	443	100	125	1296	186

* Living Kidney Donor Registry (ANZDATA) New Zealand Donor Coordinators
 x National Organ Matching System (NOMS)
 ++ Australia and New Zealand Liver Transplant Registry # Australia and New Zealand Cardiothoracic Registry

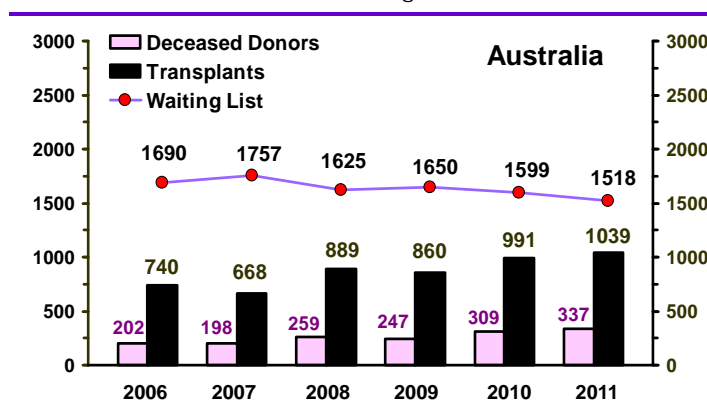
Figure 6

The number of donors, transplants, and patients on the waiting list from 2006 to 2011.

Transplants include those donor organs from Australia and New Zealand.

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Number of Deceased Donors, Solid Organ Transplants and Patients on the Waiting List 2006 – 2011



DONORS PER THOUSAND DEATHS

Historically the comparison of organ donation rates between states and countries has been based upon donors per million population (dmpm). However, using the number of deaths and therefore the ability of a deceased person to be a donor as the denominator may be a more reasonable way of comparing donation rates shown in Figures 7 and 8.

Australian data on deaths for 2011 is not available until August of 2012.

New Zealand 2011 data was also not available at the time of printing

Figure 7

Donors per Million Population and Donors per Thousand Deaths () Australian States - Australia and New Zealand 2006 - 2010										
Year	QLD	NSW *	ACT *	VIC	TAS	SA	NT	WA	AUST	NZ
2006	9 (1.5)	7 (1.1)	12 (2.7)	9 (1.3)	16 (2.0)	23 (3.0)	10 (2.1)	10 (1.8)	10 (1.5)	9 (0.9)
2007	9 (1.5)	8 (1.1)	3 (0.6)	11 (1.6)	2 (0.2)	17 (2.1)	14 (3.0)	9 (1.5)	9 (1.4)	9 (1.3)
2008	11 (1.7)	8 (1.2)	14.5 (3.0)	13 (1.9)	16 (1.9)	27 (3.4)	14 (2.9)	13 (2.2)	12 (1.8)	7 (1.1)
2009	11 (1.8)	10 (1.5)	14 (5.1)	12 (1.8)	10 (1.2)	20 (2.7)	9 (2.1)	9 (1.5)	11 (1.8)	10 (1.5)
2010	11 (1.8)	12 (1.8)	17 (6.0)	18 (2.7)	20 (2.3)	19 (2.4)	9 (2.0)	10 (1.7)	14 (2.2)	9 (1.4)

* Donors per million population refers to the NSW and the ACT actual population
Data for deaths in the NSW Southern Area Health Service was not available

Figure 8

Donors per Thousand Deaths Aged < 75 years 2006 - 2010 () Is the % Deaths < 75 years as a Proportion of all Deaths*										
Year	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2006	3.8 (38%)	2.9 (34%)	7.0 (38%)	4.0 (33%)	5.6 (36%)	9.0 (32%)	2.8 (76%)	4.6 (39%)	4.1 (36%)	2.3 (39%)
2007	3.9 (38%)	3.0 (34%)	1.6 (40%)	4.9 (33%)	0.6 (35%)	5.9 (32%)	3.9 (77%)	3.9 (39%)	4.0 (35%)	3.4 (38%)
2008	4.7 (38%)	3.4 (33%)	8.1 (36%)	5.6 (33%)	5.5 (35%)	10.4 (31%)	3.9 (74%)	5.4 (38%)	5.0 (34%)	2.9 (38%)
2009	4.6 (39%)	4.2 (34%)	13.0 (39%)	5.4 (33%)	3.3 (36%)	7.9 (33%)	2.7 (77%)	3.7 (39%)	4.9 (35%)	3.9 (38%)
2010	4.7 (39%)	5.2 (34%)	16.3 (37%)	8.3 (32%)	6.6 (35%)	7.1 (32%)	2.7 (76%)	4.5 (38%)	6.0 (35%)	3.8 (38%)

* The number of actual donors is compared to the number of deaths that are aged less than 75 years (Figure 8)
Australian Bureau of Statistics - Deaths 3302.0 and Statistics NZ

DONOR POSTCODES

In the last five years (2007-2011) there have been 16 deceased donors from overseas in Australia and three in New Zealand. In Australia, there were two donors from overseas in 2011, both in New South Wales. There were two overseas donors in New Zealand in 2011.

Figure 9

Location of Postcodes of Deceased Donors 2007 - 2011										
Postcode	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	
Metropolitan	113 (45%)	237 (69%)	24 (75%)	275 (71%)	1 (3%)	118 (70%)	0 (0%)	81 (67%)	849 (63%)	
Inner Regional	74 (30%)	74 (22%)	5 (16%)	94 (24%)	15 (50%)	28 (17%)	0 (0%)	22 (18%)	312 (23%)	
Outer Regional	48 (19%)	26 (8%)	3 (9%)	18 (5%)	13 (44%)	20 (12%)	9 (64%)	9 (7%)	146 (11%)	
Rural	11 (4%)	2 (<1%)	0 (0%)	0 (0%)	1 (3%)	1 (<1%)	4 (29%)	8 (7%)	27 (2%)	
Overseas	4 (2%)	5 (1%)	0 (0%)	3 (<1%)	0 (0%)	2 (1%)	1 (7%)	1 (1%)	16 (1%)	
Total	250	344	32	390	30	169	14	121	1350	

DONOR PROFILE

AGE AND GENDER DISTRIBUTION

In Australia in 2011, 16% (54 donors) were 65 years or older and 3% (nine donors) were aged 75 years or older. The oldest donor was 85.5 years and the youngest 3.2 years (Figure 11).

Donor gender in each State, Australia and New Zealand is shown in five year cohorts in Figure 10.

The mean age for donors in Australia in 2011, was 47.8 years, the highest since records began in 1989. The mean age in 1989 was 32.4 years and the age range was between 16.5 months and 69.5 years.

The mean age for the larger Australian States in 2011 ranged from 44.6 years in Queensland to 52.1 years in South Australia. If the smaller States and Territories are included the range was 42.8 years in Tasmania to 52.1 years in South Australia.

The median age for Australia in 2011 was 50.4 years, the highest since records began in 1989.

In the larger Australian States the median age ranged from 48.7 years in Western Australia to 55.5 years in South Australia. If the smaller States and Territories are included the range was 43.5 years in Tasmania to 55.5 years in South Australia. The mean and median age for donors from 1989 to 2009 for each State are shown in three year cohorts and for two years from 2010 to 2011 in Figures 12 and 13.

In New Zealand the mean age decreased from 43.5 years in 2010 to 40.2 years in 2011. The median age increased from 43.1 years in 2010 to 44.0 years in 2011. There were no donors over 75 years of age. The age range was between 13.0 years and 73.8 years.

Figure 14 shows donors according to age and gender in Australia and New Zealand for the years 2003-2005, 2006-2008 and 2009-2011.

Figure 10

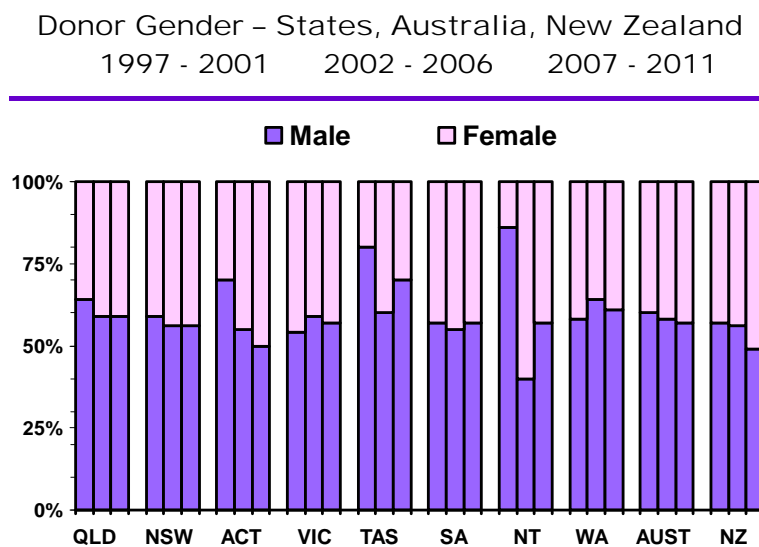


Figure 11

Age of Male and Female Donors 2003 - 2011								
	Year	Mean (years)			Median (years)			Range in Years
		All	Female	Male	All	Female	Male	
Aust	2003	42.7	46.4	40.1	45.5	48.4	42.5	0.96 - 85.3
	2004	43.2	44.0	42.7	46.6	47.4	44.1	1.12 - 80.5
	2005	42.8	46.8	39.3	45.3	50.0	40.5	0.6 - 79.5
	2006	43.3	45.5	41.3	45.3	48.0	44.1	1.3 - 78.2
	2007	43.4	46.0	41.3	45.2	49.6	42.0	0.7 - 80.4
	2008	44.8	47.6	43.0	46.2	48.3	44.0	1.7 - 82.3
	2009	45.9	48.5	44.1	48.3	51.3	46.7	0.5 - 80.6
	2010	47.3	49.0	46.1	48.9	51.7	46.1	2.1 - 84.3
	2011	47.8	49.5	46.4	50.4	52.2	49.7	3.2 - 85.5
NZ	2003	38.0	35.6	39.4	39.7	40.3	39.0	13.0 - 75.1
	2004	43.0	43.4	42.7	46.1	47.7	43.4	1.15 - 78.2
	2005	45.3	47.1	43.9	48.6	48.6	45.4	17.4 - 64.4
	2006	36.5	41.6	33.2	35.4	38.4	30.0	11.6 - 69.4
	2007	46.6	47.4	45.3	48.8	49.1	48.4	11.8 - 71.6
	2008	42.7	49.4	34.6	44.4	50.5	31.2	11.9 - 67.6
	2009	44.3	43.8	44.7	46.9	46.5	50.7	3.6 - 74.6
	2010	43.5	44.5	42.3	43.1	47.5	41.8	15.1 - 71.4
	2011	40.2	44.9	37.5	44.0	48.8	37.5	13.0 - 73.8

Figure 12

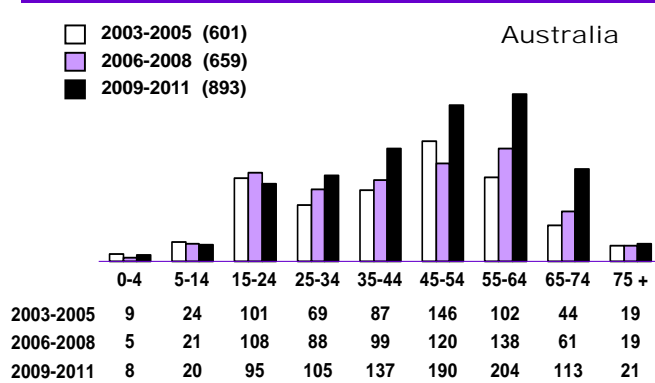
Australian States Mean Age of Donors								
Years	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
1989 - 1991	31.2	37.1	29.8	32.4	20.1	30.8	35.9	29.2
1992 - 1994	31.9	38.2	35.3	39.8	27.4	38.2	29.3	35.0
1995 - 1997	34.2	38.5	44.2	42.0	33.2	41.4	36.0	36.9
1998 - 2000	38.4	41.9	37.2	42.9	39.7	38.3	37.0	37.3
2001 - 2003	38.6	41.4	40.0	43.8	34.3	41.2	44.7	32.5
2004 - 2006	39.9	46.5	40.4	42.6	33.4	43.6	38.9	43.2
2007 - 2009	39.1	45.7	38.9	45.5	34.2	49.4	51.5	47.7
2010 - 2011	45.0	48.1	47.2	48.6	47.3	49.8	40.3	45.4

Figure 13

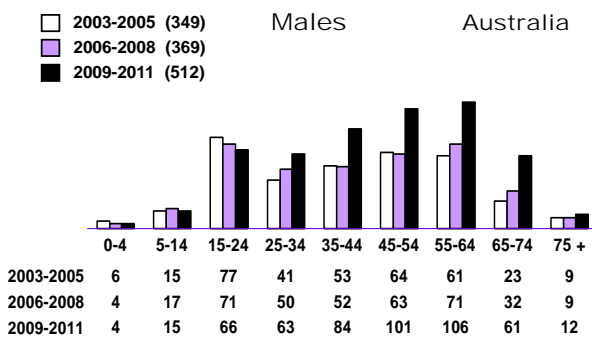
Australian States Median Age of Donors								
Years	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
1989 - 1991	31.5	38.9	30.4	28.4	17.3	28.9	31.8	28.8
1992 - 1994	31.7	40.1	27.2	40.7	25.1	38.6	27.9	33.6
1995 - 1997	37.5	38.4	45.9	45.5	33.9	45.4	35.5	39.4
1998 - 2000	40.3	43.6	37.2	46.4	42.6	42.4	32.8	44.7
2001 - 2003	40.5	42.9	37.9	48.8	21.4	44.7	47.6	31.8
2004 - 2006	42.2	48.3	45.8	46.9	34.0	47.2	42.4	44.6
2007 - 2009	40.8	48.2	40.6	47.4	30.7	51.5	60.0	52.9
2010 - 2011	48.8	50.5	52.7	50.5	55.0	52.5	43.0	48.3

Figure 14

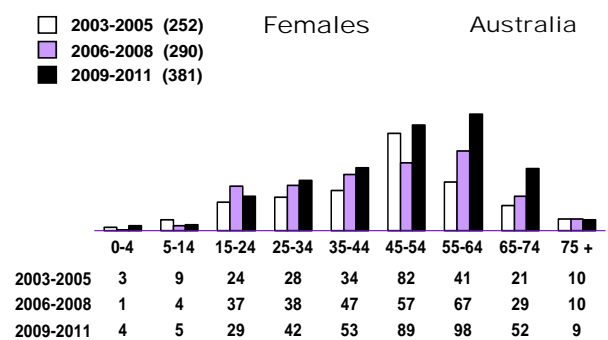
Age Group of Deceased Donors



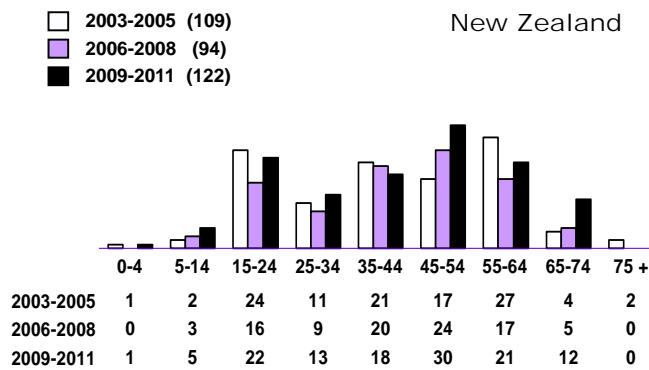
Age and Gender Distribution of Donors



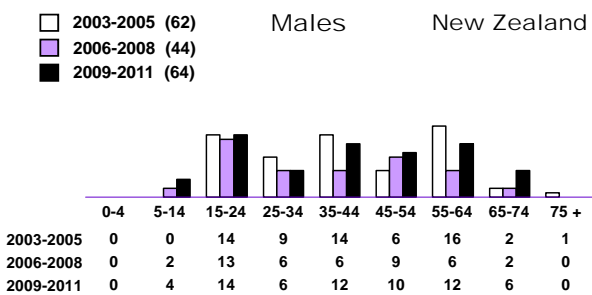
Age and Gender Distribution of Donors



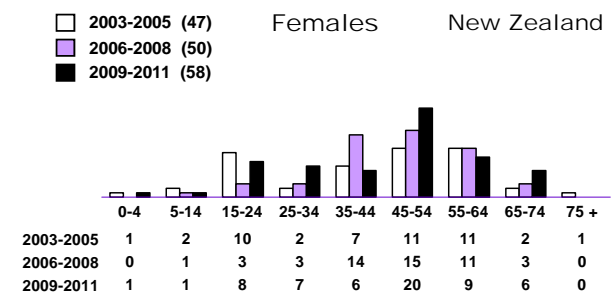
Age Group of Deceased Donors



Age and Gender Distribution of Donors



Age and Gender Distribution of Donors



CAUSE OF DEATH - ALL DONORS

The cause of death for all organ donors in Australia since 1989 and for New Zealand since 1994 is shown in Figure 15.

In Australia and New Zealand, road trauma continues to be a reducing cause of death while cerebrovascular accident (CVA) has been increasing in Australia since 1989, although in New Zealand figures have remained steady.

In the period 2005-2011, CVA accounted for 51% of donor deaths and road trauma 14%.

Figure 16 shows the cause of death by percentage in Australia and each Australian State from 2005 to 2011, and New Zealand from 2006 to 2011.

Figure 17 shows detailed cause of death by gender in Australia and New Zealand for 2011.

Figure 18 shows that CVA is the main cause of death in donors 55 years and older, 68% in Australia and 100% in New Zealand, whereas in the 15-34 year age group, trauma accounted for 36% of all deaths in Australia and 46% in New Zealand in 2011.

The cause of death by age group is shown in Figure 19 for each Australian State for 2011.

Figure 20 shows the cause of donor death in each Australian State and New Zealand each year from 2003-2011.

Figures 21-23 show the occupation, ethnic origin and religious denomination of donors in Australia and New Zealand for 2007-2011.

Figure 15

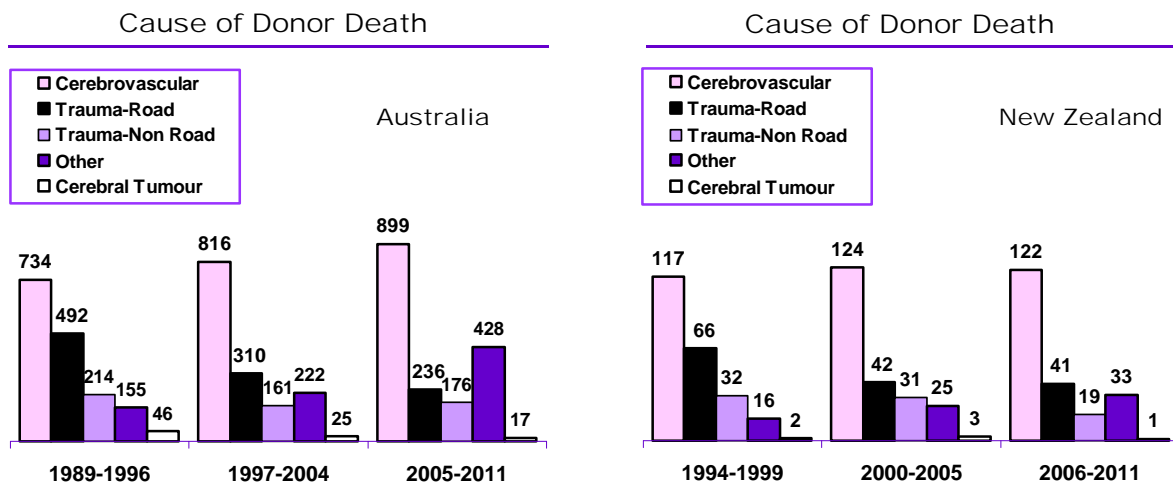


Figure 16

	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ *
CVA	45%	53%	51%	53%	48%	54%	55%	51%	51%	56%
Trauma (road)	19%	13%	18%	10%	10%	11%	30%	17%	14%	19%
Trauma (non-road)	14%	9%	7%	7%	15%	10%	10%	12%	10%	9%
Hypoxia-Anoxia	18%	19%	22%	25%	25%	21%	0%	12%	20%	12%
Cerebral Tumour	1%	1%	0%	<1%	0%	<1%	0%	2%	1%	1%
Other	3%	5%	2%	5%	2%	4%	5%	6%	4%	3%

* NZ 2006 - 2011

Figure 17

Cause of Donor Death 2011							
Causes of Death		Australia			New Zealand		
		Male	Female	Total	Male	Female	Total
CVA	Cerebral Infarct	11	9	20	1	1	2
	Intracranial Haemorrhage	35	38	73	5	4	9
	Subarachnoid Haemorrhage	30	42	72	2	6	8
Road Trauma	Cyclist	6	1	7	0	0	0
	Motor Bike Accident	4	1	5	1	0	1
	Motor Vehicle Accident	4	8	12	2	0	2
	Pedestrian	8	4	12	3	0	3
	Other Road Accident	1	0	1	0	0	0
Other Trauma	Fall	13	8	21	3	0	3
	Felony / Crime - Assault	2	0	2	1	0	1
	Gunshot	3	1	4	0	0	0
	Other Accident	7	0	7	0	0	0
Hypoxia Anoxia	Anaphylaxis	1	0	1	0	0	0
	Asthma	0	3	3	1	1	2
	Cardiac Arrest	26	8	34	1	1	2
	Choking	2	2	4	0	0	0
	Drowning	1	0	1	1	0	1
	Hanging	12	8	20	2	0	2
	Hydrocephalus	1	0	1	0	0	0
	Ischaemic Encephalopathy	0	1	1	0	0	0
	Overdose	2	3	5	0	0	0
	Post Operative	1	0	1	0	0	0
	Respiratory Arrest	0	2	2	0	1	1
	Respiratory Failure	2	1	3	0	0	0
Sleep Apnoea	1	0	1	0	0	0	
Cerebral Tumour	Glioblastoma (Malignant)	0	1	1	0	0	0
Other	Brain Stem Haemorrhage	1	0	1	0	0	0
	Bronchiectasis	0	1	1	0	0	0
	Cerebral Oedema	5	7	12	1	0	1
	Chronic Liver Disease	1	0	1	0	0	0
	Fulminant Liver Failure	0	1	1	0	0	0
	Heart Failure	1	0	1	0	0	0
	HINI Respiratory Failure	1	0	1	0	0	0
	Multiple Brain Abscesses	1	0	1	0	0	0
	Pulmonary Embolism	0	1	1	0	0	0
	Respiratory Failure	1	1	2	0	0	0
	Traumatic Brain Injury-Unknown Cause	1	0	1	0	0	0
Total		185	152	337	24	14	38

Figure 18

Cause of Donor Death Related to Age Group 2011										
	Australia					New Zealand				
	Age Groups				Total	Age Groups				Total
	0-14	15-34	35-54	55 on		0-14	15-34	35-54	55 on	
CVA	1	12	60	92	165 (49%)	0	3	8	8	19 (50%)
Trauma (road)	4	15	12	6	37 (11%)	1	3	2	0	6 (16%)
Trauma (non-road)	2	11	9	12	34 (10%)	0	3	1	0	4 (11%)
Hypoxia-Anoxia	4	26	24	23	77 (23%)	2	4	2	0	8 (21%)
Cerebral Tumour	0	0	1	0	1 (<1%)	0	0	0	0	0 (0%)
Other	2	8	10	3	23 (7%)	0	0	1	0	1 (2%)
Total	13	72	116	136	337	3	13	14	8	38

Figure 19

Australian States Cause of Death Related to Age Group 2011						
		Age Groups				Total
		0-14	15-34	35-54	55 on	
Queensland	CVA	0	1	16	14	31
	Trauma (road)	3	5	3	2	13
	Trauma (non-road)	0	4	5	2	11
	Other	2	2	4	4	12
	Total	5	12	28	22	67
New South Wales	CVA	1	4	11	24	40
	Trauma (road)	0	2	1	3	6
	Trauma (non-road)	1	2	1	6	10
	Other	2	8	8	3	21
	Total	4	16	21	36	77
Australian Capital Territory (ACT)	CVA	0	0	0	3	3
	Trauma (road)	0	1	0	0	1
	Trauma (non-road)	0	0	0	0	0
	Other	1	1	1	1	4
	Total	1	2	1	4	8
Victoria	CVA	0	5	21	27	53
	Trauma (road)	0	3	3	0	6
	Trauma (non-road)	1	4	0	3	8
	Other	1	13	13	13	40
	Total	2	25	37	43	107
Tasmania	CVA	0	1	1	2	4
	Trauma (road)	0	0	0	0	0
	Trauma (non-road)	0	0	0	0	0
	Other	0	2	0	0	2
	Total	0	3	1	2	6
South Australia	CVA	0	0	6	13	19
	Trauma (road)	0	1	2	0	3
	Trauma (non-road)	0	1	1	0	2
	Other	0	3	3	5	11
	Total	0	5	12	18	35
Northern Territory	CVA	0	0	0	2	2
	Trauma (road)	0	1	1	0	2
	Trauma (non-road)	0	0	0	0	0
	Other	0	0	0	0	0
	Total	0	1	1	2	4
Western Australia	CVA	0	1	5	7	13
	Trauma (road)	1	2	2	1	6
	Trauma (non-road)	0	0	2	1	3
	Other	0	5	6	0	11
	Total	1	8	15	9	33

Figure 20

Cause of Donor Death 2003 - 2011										
		2003	2004	2005	2006	2007	2008	2009	2010	2011
Queensland	CVA	19	18	19	19	16	18	18	22	31
	Trauma (road)	13	11	3	8	7	11	7	11	13
	Trauma (non-road)	6	7	6	2	5	8	7	6	11
	Hypoxia-Anoxia	2	1	2	4	6	10	6	4	6
	Cerebral Tumour	0	0	1	0	0	0	2	1	1
	Other	0	2	4	3	5	1	7	5	5
	Total	40	39	35	36	39	48	47	49	67
New South Wales	CVA	24	37	31	30	28	33	33	44	40
	Trauma (road)	12	8	9	10	8	2	7	15	6
	Trauma (non-road)	4	5	3	2	6	5	7	7	10
	Hypoxia-Anoxia	3	8	6	3	5	9	15	13	11
	Cerebral Tumour	0	1	2	0	1	0	1	1	0
	Other	3	4	3	5	5	8	6	8	10
	Total	46	63	54	50	53	57	69	88	77
Australian Capital Territory (ACT)	CVA	4	3	3	3	1	3	3	7	3
	Trauma (road)	2	1	4	0	0	0	2	1	1
	Trauma (non-road)	1	2	1	1	0	1	0	0	0
	Hypoxia-Anoxia	0	0	1	0	0	0	2	2	3
	Other	1	0	0	0	0	1	1	0	1
	Total	8	6	9	4	1	5	8	10	8
Victoria	CVA	28	27	30	25	31	38	30	49	53
	Trauma (road)	1	4	3	8	10	5	7	8	6
	Trauma (non-road)	4	5	5	1	5	6	7	5	8
	Hypoxia-Anoxia	4	4	7	6	7	14	13	26	23
	Cerebral Tumour	0	1	1	0	0	0	0	1	0
	Other	5	4	4	5	2	4	7	8	17
	Total	42	45	50	45	55	67	64	97	107
Tasmania	CVA	0	1	1	5	1	2	1	5	4
	Trauma (road)	1	0	0	0	0	2	1	1	0
	Trauma (non-road)	1	0	1	0	0	1	3	1	0
	Hypoxia-Anoxia	0	1	0	2	0	3	0	1	1
	Other	0	0	0	1	0	0	0	2	1
	Total	2	2	2	8	1	8	5	10	6
South Australia	CVA	11	17	11	19	17	19	21	15	19
	Trauma (road)	4	3	5	3	3	3	1	6	3
	Trauma (non-road)	2	3	2	1	3	8	2	4	2
	Hypoxia-Anoxia	4	13	2	9	1	6	6	2	6
	Cerebral Tumour	0	0	0	1	0	1	0	0	0
	Other	1	3	0	3	3	6	3	4	5
Total	22	39	20	36	27	43	33	31	35	
Northern Territory	CVA	1	1	2	2	2	2	0	1	2
	Trauma (road)	0	0	2	0	0	1	1	0	2
	Trauma (non-road)	0	0	0	0	1	0	1	0	0
	Other	0	0	0	0	0	0	0	1	0
	Total	1	1	4	2	3	3	2	2	4
Western Australia	CVA	7	11	16	13	8	14	12	11	13
	Trauma (road)	4	5	6	3	2	6	5	2	6
	Trauma (non-road)	6	3	4	3	5	4	1	1	3
	Hypoxia-Anoxia	1	0	0	1	4	2	1	3	3
	Cerebral Tumour	0	1	2	1	0	0	0	0	0
	Other	0	3	2	0	0	2	0	5	8
	Total	18	23	30	21	19	28	19	22	33
New Zealand	CVA	20	20	17	14	24	22	21	22	19
	Trauma (road)	9	7	3	8	7	2	9	9	6
	Trauma (non-road)	7	7	3	1	3	3	4	4	4
	Hypoxia-Anoxia	1	4	0	1	2	4	5	2	3
	Cerebral Tumour	2	0	1	0	0	0	0	1	0
	Other	1	2	5	1	2	0	4	3	6
	Total	40	40	29	25	38	31	43	41	38

Please refer to Appendix I (pages 8-12) and Appendix II (pages 4 and 5) for further details of causes of donor death

Figure 21

Occupation of Donors 2007 - 2011										
	Australia					New Zealand				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Blue Collar	34	53	43	68	62	2	1	4	8	3
Home Duties	14	13	14	19	18	1	2	2	3	0
Disability	5	8	9	7	10	0	3	0	2	0
Management	4	6	5	9	14	1	1	1	0	1
Other	0	1	0	2	2	0	0	0	0	0
Pre-school	3	1	3	4	2	0	0	1	0	0
Primary Industry	3	6	4	5	6	3	1	1	0	1
Professional	13	20	21	27	29	4	1	5	4	2
Retired	24	29	31	38	50	1	0	4	6	2
Small Business Owner	4	5	5	5	3	0	0	1	1	0
Student	19	15	18	18	26	3	4	7	6	7
Tradesperson	16	19	20	33	25	2	1	1	0	2
Unemployed	18	17	10	15	27	1	0	0	1	2
Unknown	20	32	34	5	5	16	13	15	5	14
White Collar	21	34	30	54	58	4	4	1	5	4
Total	198	259	247	309	337	38	31	43	41	38

Figure 22

Ethnic Origin of Donors 2007 - 2011										
	Australia					New Zealand				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Aboriginal	1	4	2	4	3	0	0	0	0	0
Arab	0	1	0	0	0	0	0	0	0	0
Burmese	0	0	0	0	1	0	0	0	0	1
Cambodian	0	1	0	0	0	0	0	0	0	0
Caucasoid	190	234	235	289	322	37	27	35	32	30
Greek	(1)	(0)	(3)	(2)	(3)	(0)	(0)	(0)	(0)	(0)
Italian	(1)	(0)	(4)	(2)	(3)	(0)	(0)	(0)	(0)	(0)
Lebanese	(0)	(0)	(2)	(2)	(0)	(0)	(0)	(0)	(0)	(0)
Turk	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Chilean	0	0	0	0	1	0	0	0	0	0
Chinese	1	3	3	3	1	0	0	0	1	0
Coloured African	0	0	0	0	0	0	0	1	0	0
Columbian	0	0	0	1	0	0	0	0	0	0
Filipino	0	3	0	1	0	0	0	1	0	0
Indian	0	3	1	4	1	0	0	0	1	0
Sri Lankan	(0)	(1)	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)
Indonesian	0	0	0	1	1	0	0	0	0	0
Japanese	0	0	0	0	0	0	0	0	1	0
Korean	1	1	0	0	0	1	0	1	0	0
Malay	0	4	0	4	1	0	0	0	0	0
Maori	1	0	2	0	0	0	3	5	5	3
Nigerian	1	0	0	0	0	0	0	0	0	0
Pacific People	2	0	1	0	1	0	1	0	1	4
Papua New Guinea	0	1	0	0	0	0	0	0	0	0
Peruvian	1	0	0	0	0	0	0	0	0	0
Sudanese	0	0	0	0	1	0	0	0	0	0
Thai	0	0	0	0	1	0	0	0	0	0
Vietnamese	0	4	3	2	3	0	0	0	0	0
Total	198	259	247	309	337	38	31	43	41	38

Figure 23

Religious Denomination of Donors 2007 - 2011										
	Australia					New Zealand				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
Agnostic	0	0	0	0	1	0	0	0	0	0
Buddhist	0	3	3	1	1	0	0	0	0	0
Christian	59	47	55	98	107	3	3	1	3	7
Coptic	0	0	1	0	0	0	0	0	0	0
Jehovah's Witness	0	0	3	0	1	0	0	0	0	0
Jewish	0	0	1	1	0	0	0	0	0	0
Hindu	0	2	0	2	0	0	0	0	0	0
Mormon	0	0	0	1	0	0	0	0	0	0
Muslim	0	0	1	0	0	0	0	0	0	0
No Religion	21	17	35	64	74	0	0	0	0	0
Orthodox	0	0	1	0	3	0	0	0	0	0
Sikh	0	1	0	0	0	0	0	0	0	0
Unknown	118	189	147	142	150	35	28	42	38	31
Total	198	259	247	309	337	38	31	43	41	38

INTENDED DONORS

An intended donor is a person for whom consent has been given or volunteered, but for various reasons the donor does not proceed to the operating theatre.

(These numbers are **not** included in the donor numbers in Figure 1).

Figure 24

Intended Donors 2006 - 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
2006	1	6	0	2	0	2	0	1	12	0
2007	0	6	1	5	0	3	0	0	15	0
2008	4	9	2	2	0	2	0	0	19	1
2009	2	8	1	7	1	2	0	1	22	0
2010	5	6	0	11	0	1	0	4	27	0
2011	8	11	1	24	0	4	0	3	51	0

Figure 25

Reasons Why Donation Did Not Proceed 2006 - 2011	
Year	Australia and New Zealand
2006	DCD potential donors - did not proceed to cardiac standstill (4) Disease of organs and infection (4) Consent withdrawn (1) Hepatitis B core antibody and hepatitis C positive (1) Past history of malignancy (2)
2007	DCD potential donors - did not proceed to cardiac standstill (4) DCD - Lung protocol only. Lungs medically unsuitable (3) Coronial refusal (1) Found to have refused on driver's licence (1) Hepatitis C positive - no suitable recipients (1) High risk behaviour (1) Medically unsuitable (2) Past History of malignancy (2)
2008	DCD potential donors - did not proceed to cardiac standstill (10) Authority not obtained (1) Consent withdrawn (1) DCD - Infection (1) Disease of organs - No suitable recipient (1) High risk behaviour (2) Hepatitis C positive - Medically unsuitable (1) Positive serology (2) New Zealand No suitable recipients (AB blood group) (1)
2009	DCD potential donors - did not proceed to cardiac standstill (9) Authority not obtained (1) Consent withdrawn (4) Disease of organs (3) High risk behaviour (2) Positive serology (2) Previous history of melanoma (1)
2010	DCD potential donors - did not proceed to cardiac standstill (12) Age of donor (1) Disease of organs (1) Donor Unstable (1) Extended ischaemic time (2) Hepatitis C positive (2) High risk behaviour (1) Infection (1) Malignancy (3) Medically unsuitable (3)
2011	DCD potential donors - did not proceed to cardiac standstill (17) Age of donor (1) Cardiac Arrest (1) Consent withdrawn (1) Disease of organs (5) Extended ischaemic time (2) Family refusal (1) Hepatitis B positive (1) Hepatitis B core antibody positive and hepatitis C positive (1) Infection (2) Medically unsuitable (5) Malignancy (9) No suitable recipients (3) Pathologist refusal (1) Vater Syndrome (1)

DONATION AFTER CARDIAC DEATH DONORS

Australia

The majority of organs are donated by heart-beating brain dead patients.

After a heart-beating donor is certified brain dead, they remain on the ventilator and the removal of organs may occur many hours later.

Donation after cardiac death (DCD) donors are defined as patients who are certified dead using the criterion of irreversible cessation of circulation.

As soon as cardiac death is confirmed the retrieval procedure is commenced in order to minimise warm ischaemic time.

The number of DCD donors since 2005 continues to increase each year in all the major States with the Northern Territory and Western Australia having DCD donors in 2011, the first since 2002 and 2004 respectively.

The total since 1989 is 286 donors for Australia and nine donors for New Zealand, as shown in Figure 26.

In 2011 there were 86 DCD donors; 32 in Victoria, 18 in both New South Wales and Queensland, eight in South Australia, seven in Western Australia, two in the Australian Capital Territory (ACT) and one in the Northern Territory.

The first multiorgan DCD was performed in South Australia in 2006.

In 2011, the mean age was 46.5 years and age range was 3.3 years to 73.2 years. The donor age group for each State, Australia and New Zealand is shown in Figure 27.

Causes of death in 2011 were CVA (25), hypoxia-anoxia (24), road trauma (13), other trauma (11), cerebral oedema (3) and other causes (10).

Thirty six donors had two or more organs transplanted, a further 38 donors had two kidneys transplanted (two kidneys=one organ), six donors had a single kidney transplanted (three of those were a double adult and one en bloc), and a further four donors had double lungs transplanted.

Two of the 86 donors in 2011 did not have any organs transplanted, but both of those donors had corneas sent to the Tissue Bank.

The number and type of organs transplanted or sent to the Tissue Bank from 1989-2011 is shown for Australia in Figure 28 and for each Australia State in Figure 29.

There were 38 intended DCD donors during 2011; 17 did not proceed to cardiac standstill; four each had a malignancy and disease of organs; three, no suitable recipients; two each were medically unsuitable, had extended ischaemic times and were hepatitis B positive and four others were due to a cardiac arrest, family refusal, pathologist refusal and consent withdrawn.

New Zealand

There were two DCD donors in New Zealand in 2011, donating four kidneys, two livers and two corneas.

Figure 26

Donation after Cardiac Death Donors 1989 - 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	Aust	NZ
1989	0	0	0	1	0	1	0	0	2	-
1990	0	2	0	0	0	1	0	0	3	-
1991	0	2	0	0	0	0	0	0	2	-
1992	0	1	0	0	0	0	0	0	1	-
1993	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	1	0	0	1	1
1995	0	3	0	1	0	0	0	0	4	0
1996	1	1	0	0	0	0	0	0	2	0
1997	0	2	0	0	0	1	0	0	3	1
1998	0	0	0	0	0	2	0	0	2	0
1999	1	0	0	0	0	0	0	0	1	0
2000	0	0	0	0	0	0	1	0	1	0
2001	0	1	0	1	0	0	0	0	2	0
2002	0	0	0	0	0	1	1	0	2	0
2003	0	1	0	0	0	0	0	0	1	0
2004	0	2	0	0	0	0	0	1	3	0
2005	0	8	0	0	0	1	0	0	9	0
2006	0	4	0	1	0	3	0	0	8	0
2007	0	8	0	9	0	2	0	0	19	0
2008	5	10	2	3	0	3	0	0	23	2
2009	5	15	2	17	0	3	0	0	42	2
2010	13	24	3	24	0	5	0	0	69	1
2011	18	18	2	32	0	8	1	7	86	2
Total	43	102	9	89	0	32	3	8	286	9

Figure 27

Donation after Cardiac Death Donors 2008 - 2011 By Age Group and State - Australia and New Zealand											
Year	Age Group	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	Aust	NZ
2008	05-14	0	0	1	0	0	0	0	0	1	0
	15-24	2	2	0	0	0	0	0	0	4	1
	25-34	0	2	0	1	0	0	0	0	3	0
	35-44	1	1	0	1	0	1	0	0	4	1
	45-54	2	3	0	0	0	0	0	0	5	0
	55-64	0	1	1	1	0	2	0	0	5	0
	65-74	0	1	0	0	0	0	0	0	1	0
Total		5	10	2	3	0	3	0	0	23	2
2009	05-14	0	0	0	0	0	0	0	0	0	0
	15-24	0	1	0	3	0	0	0	0	4	1
	25-34	1	3	1	0	0	0	0	0	5	0
	35-44	1	2	0	1	0	0	0	0	4	0
	45-54	1	3	1	4	0	2	0	0	11	1
	55-64	2	3	0	6	0	0	0	0	11	0
	65-74	0	3	0	3	0	1	0	0	7	0
Total		5	15	2	17	0	3	0	0	42	2
2010	00-04	0	1	0	0	0	0	0	0	1	0
	05-14	0	0	0	0	0	0	0	0	0	0
	15-24	3	1	0	1	0	1	0	0	6	1
	25-34	1	3	1	1	0	2	0	0	8	0
	35-44	1	6	1	4	0	0	0	0	12	0
	45-54	3	6	1	5	0	1	0	0	16	0
	55-64	4	6	0	9	0	1	0	0	20	0
65-74	1	1	0	4	0	0	0	0	6	0	
Total		13	24	3	24	0	5	0	0	69	1
2011	00-04	0	0	0	1	0	0	0	0	1	0
	05-14	0	0	0	0	0	0	0	0	0	1
	15-24	4	4	1	2	0	0	0	1	12	0
	25-34	0	1	0	5	0	1	0	1	8	0
	35-44	5	1	0	8	0	1	0	2	17	0
	45-54	3	3	0	7	0	1	1	2	17	1
	55-64	4	7	1	4	0	2	0	1	19	0
65-74	2	2	0	5	0	3	0	0	12	0	
Total		18	18	2	32	0	8	1	7	86	2

Figure 28

Donation after Cardiac Death Donors Australia 1989 - 2011 Organs Transplanted or Sent to Tissue Bank in Australia																								
Organs	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	Total
Kidneys	4	4	3	2	0	0	7	4	5	4	2	2	1	4	2	6	18	12	27	43	75	117	151	493
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	4	12	11	35
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	7	14	27	32	90
(L) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
(R) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Pancreas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Cornea	4	4	0	0	0	2	0	4	2	0	0	0	4	2	0	4	10	6	18	14	28	75	86	263
Bone	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	4	3	12	14	37
Heart Valves	0	1	0	0	0	0	0	2	1	0	1	0	1	0	0	0	5	3	8	12	11	26	18	89
Tissue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	7	13
Total	9	9	3	2	0	3	7	10	8	4	3	2	6	6	2	10	33	25	67	85	138	272	320	1024

Figure 29

Donation After Cardiac Death Donors 1989 - 2011																								
Organs Transplanted or Sent to Tissue Bank in Australia by State																								
Donor State	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	Total
Queensland																								
Kidneys	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	10	8	25	32	79
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	6	11
Cornea	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	8	16	26
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	10	18
Heart Valves	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	2	3	4	14
Tissue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Total	0	0	0	0	0	0	0	5	0	0	3	0	0	0	0	0	0	0	0	15	12	45	75	155
New South Wales																								
Kidneys	0	4	3	2	0	0	5	2	4	0	0	0	0	0	2	4	16	8	13	18	27	45	33	186
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	6	4	17
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	5	8	6	25
Cornea	0	2	0	0	0	0	0	2	0	0	0	0	2	0	0	4	10	2	8	8	4	20	10	72
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	1	6
Heart Valves	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	5	3	3	6	6	10	3	38
Total	0	6	3	2	0	0	5	5	5	0	0	0	2	0	2	8	31	13	27	39	47	92	57	344
ACT																								
Kidneys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4	16
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	4
Cornea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	4	10
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	1	4
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	4	12	11	37
Victoria																								
Kidneys	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	12	6	30	33	55	141
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	3	8
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	7	13	13	40
(L) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
(R) Lung	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pancreas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Cornea	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	10	4	20	37	34	111
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	2	9
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	1	2	11	7	26
Tissue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	2	8
Total	4	0	0	0	0	0	2	0	0	0	0	0	4	0	0	0	0	3	35	16	64	102	117	347
South Australia																								
Kidneys	2	0	0	0	0	0	0	0	1	4	0	0	0	2	0	0	2	4	2	5	6	10	13	51
Liver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	5
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	6
Cornea	2	2	0	0	0	2	0	0	2	0	0	0	0	2	0	0	0	2	0	0	4	6	12	34
Bone	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3
Heart Valves	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4
Total	5	3	0	0	0	3	0	0	3	4	0	0	0	4	0	0	2	9	5	5	11	21	28	103
Northern Territory																								
Kidneys	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2	6
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	8
Western Australia																								
Kidneys	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	12	14
Lungs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Cornea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Bone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Heart Valves	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	28	30
Australia	9	9	3	2	0	3	7	10	8	4	3	2	6	6	2	10	33	25	67	85	138	272	320	1024

CARDIOPULMONARY RESUSCITATION

Cardiopulmonary resuscitation is recorded for events leading up to the admission and hospital stay for the patient, prior to organ donation (Figures 30 and 31).

Figure 30

Cardiopulmonary Resuscitation 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Yes	51	60	83	89	112	111	8	6	11	13	15	13
No	151	137	176	158	197	226	17	32	19	30	26	25
Unknown	0	1	0	0	0	0	0	0	1	0	0	0
Total	202	198	259	247	309	337	25	38	31	43	41	38

Figure 31

Australian States Cardiopulmonary Resuscitation 2011 (2010)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Yes	10 (18)	23 (26)	4 (2)	48 (44)	3 (2)	12 (11)	0 (0)	11 (9)
No	57 (31)	54 (62)	4 (8)	59 (53)	3 (8)	23 (20)	4 (2)	22 (13)
Total	67 (49)	77 (88)	8 (10)	107 (97)	6 (10)	35 (31)	4 (2)	33 (22)

DONOR WEIGHT

The allocation of heart, lungs and livers are based on the matching of recipient and donor size and weight.

In 2011 there were eight donors in Australia and no donors in New Zealand who weighed less than 40 kilograms (Figure 32).

Figure 32

Donor Weight 2006 - 2011												
		Kilograms										Total
		0-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	
Australia	2006	1	4	4	5	10	43	41	50	26	18	202
	2007	3	0	1	3	14	29	46	47	34	21	198
	2008	1	1	4	3	18	33	63	71	30	35	259
	2009	2	2	0	3	11	45	56	56	35	37	247
	2010	2	5	4	2	20	43	62	70	53	48	309
	2011	3	4	1	6	31	59	73	74	48	38	337
New Zealand	2006	0	1	0	0	2	5	6	4	4	3	25
	2007	0	0	1	0	2	8	12	8	5	2	38
	2008	0	0	0	2	2	4	11	6	4	2	31
	2009	0	2	0	1	7	7	11	6	8	1	43
	2010	1	0	0	1	2	6	14	8	4	5	41
	2011	0	0	0	2	1	11	7	9	4	4	38

VIROLOGY SCREENING

Figure 33

Cytomegalovirus (CMV) Status of Donors 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Negative	65	93	92	103	118	123	10	14	16	24	18	17
Positive	137	105	167	144	191	214	15	24	15	19	23	21
Total	202	198	259	247	309	337	25	38	31	43	41	38

Figure 34

Epstein-Barr Virus (EBV) Status of Donors 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Negative	26	12	18	14	14	28	1	5	3	3	2	4
Not done	53	54	62	76	97	16	0	0	0	3	6	7
Positive	123	132	179	157	198	293	24	33	28	37	33	27
Total	202	198	259	247	309	337	25	38	31	43	41	38

Not all Australian States require organ donors to be tested for EBV

Figure 35

Hepatitis C Antibody Status of Donors 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Negative	201	194	254	242	307	330	24	37	30	43	41	37
Positive	1	4	5	5	2	7	1	1	1	0	0	1
Total	202	198	259	247	309	337	25	38	31	43	41	38

HEPATITIS C ANTIBODY

There were seven positive Hepatitis C donors in Australia and one in New Zealand in 2011.

All were beating heart donors. There were three kidneys, three whole livers, two split livers, three double lungs and one single lung transplanted from six of those donors. One donor had a diseased liver and this was not retrieved.

One kidney donor was also HBV core antibody positive.

The New Zealand donor, who was also HBV core antibody positive provided one kidney.

Figure 36

Hepatitis B Core Antibody Status of Donors 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Negative	191	191	243	234	289	326	21	33	29	38	39	33
Positive	11	7	16	13	20	11	4	5	2	5	2	5
Total	202	198	259	247	309	337	25	38	31	43	41	38

HEPATITIS B CORE ANTIBODY

The Registry commenced collection of Hepatitis B core antibody results in 1998.

A positive result was recorded for 3% (11) of Australian donors and 13% (5) of New Zealand donors in 2011. All were beating heart donors.

From the eleven Australian donors there were 13 kidneys, six livers, five double lungs, four hearts and one pancreas transplanted and one bone donation.

Two donors did not have any organs transplanted due to disease of the liver and a suspicious lesion of the kidneys found at retrieval.

From the five New Zealand donors, nine kidneys, four livers, three hearts, one double lung and two cornea were transplanted or sent to the Tissue Bank. All were beating heart donors.

HEPATITIS B SURFACE ANTIGEN

Since 1993, all donors in Australia and New Zealand have been negative for Hepatitis B surface antigen, excepting one donor in 2004 who was not tested as their condition deteriorated in theatre and no organs were retrieved.

MEDICAL CONDITION OF DONORS

DIABETES

There were six Type 1 and 22 Type 2 diabetic donors in Australia in 2011 and one Type 2 diabetic donor in New Zealand.

The six diabetic Type 1 donors (including two DCD donors) provided eight kidneys, two livers, one split liver, one heart, four double lungs, three cornea and one set of heart valves.

There were 22 Type 2 donors (including five DCD donors) who provided 32 kidneys, seven livers, eight double lungs, one pancreas islets, 18 corneas, four sets of heart valves, two bone donations and one tissue donation.

The one diabetic Type 2 donor in New Zealand did not have any organs retrieved due to disease.

HYPERTENSION

A past history of hypertension was recorded in 27% (90 donors) in Australia and 18% (seven donors) in New Zealand in 2011 (Figure 38). Included in the 90 donors for Australia were 21 DCD donors with a past history of hypertension.

These donors provided Australia with 133 kidneys, 41 livers, two split livers, nine hearts, one heart/lung, 32 double lungs, three single lungs, one pancreas, two pancreas islets, 94 corneas, seven sets of heart valves, nine bone and five tissue donations. Three of the 90 donors did not provide any organs due to disease.

In New Zealand, five donors provided eight kidneys, five livers, two hearts, three double lungs, four cornea and two sets of heart valves. Two donors did not have any organs retrieved due to disease.

SMOKING

In 2011, 35% (119) Australian donors were recorded as current smokers and 23% (76 donors) as former smokers, while in New Zealand, 32% (twelve donors) were reported as current and 21% (eight donors) as former.

CANCER IN DONOR

Australia (18 donors)

- * four melanoma - skin (1995, 2003, 2005, 2008)
- * three SCC (cervix -1998, 2001) - supraglottis (2005)
- * two adenocarcinoma (breast 1989) - rectum (2001)
- * one renal cell carcinoma - kidney (2011)
- * one lymphoma - lung (2010) (no organs transplanted)
- * one craniopharyngioma - brain (2009)
- * one glioblastoma - brain (2011)
- * one teratoma - choriocarcinoma - testis (1988)
- * one TCC - bladder (1997)
- * two unknown - breast (1987, 1995)
- * one unknown - uterus (1980)

There were 26 kidneys, eight livers, two split livers, three hearts, four double lungs, one pancreas islets, 20 corneas and two sets of heart valves transplanted from 17 of these donors. Four were DCD donors.

One donor had a lymphoma diagnosed intra-operatively and no organs were transplanted.

New Zealand (no donors had cancer in 2011)

Figure 37

Medical Condition of Donors by Australian States 2011 (2010)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Diabetes Type 1	2 (0)	2 (1)	0 (0)	2 (4)	0 (0)	0 (1)	0 (0)	0 (1)
Diabetes Type 2	5 (0)	5 (7)	1 (1)	5 (10)	0 (1)	5 (3)	0 (0)	1 (0)
Hypertension	16 (11)	24 (21)	3 (4)	31 (30)	2 (4)	9 (10)	1 (0)	4 (6)
Smoking - Current	27 (23)	23 (32)	3 (4)	40 (38)	3 (4)	9 (11)	1 (1)	13 (7)
Cancer	4 (5)	3 (4)	0 (0)	3 (3)	0 (0)	3 (2)	0 (0)	5 (2)

Figure 38

Donor Diabetes, Smoking and Cancer 2006 - 2011		2006	2007	2008	2009	2010	2011
Australia	Diabetes Type 1	7 (3%)	2 (1%)	5 (2%)	7 (3%)	7 (2%)	6 (2%)
	Diabetes Type 2	11 (5%)	12 (6%)	14 (5%)	15 (6%)	22 (7%)	22 (7%)
	Hypertension	44 (22%)	45 (23%)	58 (22%)	63 (25%)	86 (28%)	90 (27%)
	Unknown	2 (1%)	5 (3%)	3 (1%)	2 (1%)	2 (<1%)	4 (1%)
	Smoking						
	Current	77 (38%)	77 (39%)	115 (44%)	98 (40%)	120 (39%)	119 (35%)
	Former	44 (22%)	39 (20%)	53 (20%)	49 (20%)	80 (26%)	76 (23%)
	Unknown	0 (0%)	1 (1%)	2 (1%)	0 (0%)	0 (0%)	0 (0%)
	Cancer	3 (1%)	3 (2%)	6 (2%)	9 (4%)	16 (5%)	18 (5%)
	Total Donors	(n=202)	(n=198)	(n=259)	(n=247)	(n=309)	(n=337)
New Zealand	Diabetes Type 1	1 (4%)	1 (3%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)
	Diabetes Type 2	1 (4%)	1 (3%)	1 (3%)	1 (2%)	2 (5%)	1 (3%)
	Hypertension	5 (20%)	9 (24%)	6 (19%)	15 (35%)	5 (12%)	7 (18%)
	Smoking						
	Current	8 (32%)	14 (37%)	8 (26%)	11 (26%)	8 (20%)	12 (32%)
	Former	3 (12%)	5 (13%)	5 (16%)	13 (30%)	9 (22%)	8 (21%)
	Unknown	0 (0%)	0 (0%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)
	Cancer	0 (0%)	1 (3%)	1 (3%)	0 (0%)	0 (0%)	0 (0%)
	Total Donors	(n=25)	(n=38)	(n=31)	(n=43)	(n=41)	(n=38)

Figure 39

Expanded* Criteria for Kidney Donors 2011 (2010) States, Australia and New Zealand										
Donor Type	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
Expanded	17 (10)	25 (28)	2 (4)	36 (31)	2 (5)	13 (6)	1 (0)	6 (6)	102 (90)	4 (3)
Non Expanded	47 (38)	45 (55)	5 (5)	58 (60)	4 (4)	17 (21)	2 (2)	24 (16)	202 (201)	29 (28)
Total	64 (48)	70 (83)	7 (9)	94 (91)	6 (9)	30 (27)	3 (2)	30 (22)	304 (291)	33 (31)

*An expanded criteria kidney donor as defined in American Journal of Transplantation 2003; 3 (Suppl. 4): 114-125
i.e. any donor aged ≥ 60 years, or any donor aged 50-59, with two of the following three criteria:
CVA death, or terminal creatinine >133 , or hypertension

DONOR INTENTION

Figures 40 and 41 show whether the donor had recorded an intention to donate through a signed driver's licence. In 2011 24% (80) Australian donors and 11% (four) New Zealand organ donors had a signed driver's licence. Figure 42 shows the number of donors enrolled in the Australian Organ Donation Registry, which commenced in 2000.

Figure 40

Driver's Licence Intention Status 2006 - 2011												
Intention	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Yes	57 (28%)	68 (34%)	67 (26%)	73 (30%)	85 (28%)	80 (24%)	5 (20%)	13 (34%)	2 (6%)	7 (16%)	5 (12%)	4 (11%)
Age/Not Applicable	38	35	56	49	126	113	1	2	2	3	0	3
No	23	50	55	42	31	45	0	0	1	0	0	1
Unknown	84	45	81	83	67	99	19	23	26	33	36	30
Total	202	198	259	247	309	337	25	38	31	43	41	38

Figure 41

Australian States 2011 (2010) Driver's Licence Intention Status								
Intention	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Yes	7 (1)	51 (60)	1 (6)	2 (2)	1 (0)	15 (13)	0 (0)	3 (3)
Student/ Not Applicable	41 (38)	8 (7)	4 (0)	31 (55)	2 (9)	6 (2)	1 (1)	20 (14)
No	10 (1)	14 (18)	3 (4)	6 (5)	1 (0)	0 (0)	2 (0)	9 (3)
Unknown	9 (9)	4 (3)	0 (0)	68 (35)	2 (1)	14 (16)	1 (1)	1 (2)
Total	67 (49)	77 (88)	8 (10)	107 (97)	6 (10)	35 (31)	4 (2)	33 (22)

Figure 42

Donors Enrolled in the Australian Organ Donor Registry 2011 (2010)									
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST
Yes	21 (11)	22 (35)	0 (6)	26 (18)	2 (4)	17 (8)	1 (1)	16 (9)	105 (92)
Not Registered	40 (36)	49 (47)	7 (4)	79 (77)	4 (6)	18 (22)	2 (0)	15 (9)	214 (201)
Not Accessed	0 (0)	0 (1)	0 (0)	2 (1)	0 (0)	0 (1)	0 (0)	1 (2)	3 (5)
Not Applicable	6 (2)	6 (5)	1 (0)	0 (1)	0 (0)	0 (0)	1 (1)	1 (2)	15 (11)
Total	67 (49)	77 (88)	8 (10)	107 (97)	6 (10)	35 (31)	4 (2)	33 (22)	337 (309)

AUTHORITY SOUGHT FOR ORGAN DONATION

The predominant group requesting authority for organ donation in 2011 were the Intensive Care Clinicians and Registrars, (58%) in Australia and (82%) in New Zealand shown in Figure 43.

In Australia authority for organ donation was sought by donor coordinators in only one case (Figure 43). See Figure 44 for individual State and Territory statistics.

Authority for organ donation was not sought by donor coordinators in New Zealand.

In 2011, 36% of families volunteered authority for organ donation in Australia, compared to 27% in 2010 (Figure 43).

In New Zealand, 13% volunteered authority in 2011 compared to 22% in 2010 and 16% in 2009.

Figure 43

Authority to Donate 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
ICU Clinician	117	107	153	147	200	179	16	33	19	31	29	30
ICU Registrar	14	11	10	4	13	18	2	2	0	2	1	1
Emergency Consultant/Registrar	4	1	6	2	9	14	0	0	0	0	0	0
Other Physicians/Anaesthetist	4	2	1	0	0	1	1	1	2	2	1	2
Donor Coordinator	17	4	4	2	2	1	0	0	0	0	0	0
Volunteered by Family	45	73	83	90	82	123	6	2	8	7	9	5
Nursing Staff - Social Worker	1	0	0	2	2	1	0	0	2	1	1	0
Accident and Emergency Staff	0	0	2	0	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	1	0	0	0	0	0	0	0
Total	202	198	259	247	309	337	25	38	31	43	41	38

Figure 44

Authority to Donate 2011 (2010)									
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	
ICU Clinician	23 (36)	53 (65)	5 (8)	56 (48)	4 (6)	13 (25)	3 (0)	22 (12)	
ICU Registrar	1 (0)	3 (1)	0 (0)	10 (8)	0 (0)	1 (2)	0 (0)	3 (2)	
Emergency Consultant/Registrar	0 (0)	1 (1)	1 (0)	11 (6)	0 (2)	0 (0)	0 (0)	1 (0)	
Other Physicians/Anaesthetist	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	
Donor Coordinator	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (2)	
Volunteered by Family	43 (13)	20 (21)	2 (2)	28 (33)	2 (2)	21 (4)	1 (1)	6 (6)	
Nursing Staff - Social Worker	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	0 (1)	0 (0)	
Unknown	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	
Total	67 (49)	77 (88)	8 (10)	107 (97)	6 (10)	35 (31)	4 (2)	33 (22)	

DIRECT CONTACT WITH DONOR COORDINATOR

There were three families (1%) in Australia with whom the Donor Coordinator had no contact and four families (10%) in New Zealand in 2011.

Figure 45

Direct Contact with Donor Coordinator 2011											
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ	
Face to Face	65 (97%)	74 (96%)	8 (100%)	97 (91%)	4 (67%)	34 (97%)	4 (100%)	31 (94%)	317 (94%)	28 (74%)	
Telephone	1 (1.5%)	2 (3%)	0 (0%)	9 (8%)	2 (33%)	1 (3%)	0 (0%)	2 (6%)	17 (5%)	6 (16%)	
None	1 (1.5%)	1 (1%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (1%)	4 (10%)	
Total	67	77	8	107	6	35	4	33	337	38	

CORONER'S CASES

In Australia, 42% of donors in 2011 were subject to Coronial inquiry, compared to 39% in 2010. In New Zealand it was 42% for 2011 and 44% in 2010.

Figure 46

Coroner's Cases 2006 - 2011												
	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Yes	80	96	120	106	121	141	15	12	12	19	18	16
No	122	102	139	141	188	196	10	26	19	24	23	22
Total	202	198	259	247	309	337	25	38	31	43	41	38

Figure 47

Australian States Coroner's Cases 2011 (2010)								
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA
Yes	31 (20)	29 (31)	6 (5)	39 (36)	2 (4)	17 (15)	2 (0)	15 (10)
No	36 (29)	48 (57)	2 (5)	68 (61)	4 (6)	18 (16)	2 (2)	18 (12)
Total	67 (49)	77 (88)	8 (10)	107 (97)	6 (10)	35 (31)	4 (2)	33 (22)

SUMMARY - ORGANS REQUESTED, CONSENT GIVEN,
RETRIEVED AND TRANSPLANTED

The information relating to the request for organ donation refers only to those patients who become organ donors. If consent was sought and refused, the Registry has no record of these potential donors.

The difference between a request and a consent is a known objection by the donor or family refusal for the specific organ.

Reasons for not requesting organs, not retrieving and not transplanting are documented for all of the specific organs.

For further details see Appendix I for Australia and Appendix II for New Zealand.

Figure 48 shows the outcome of organs requested in 2011 (2010).

Figure 48

Outcome Following Request for Organ Donation 2011 (2010)							
		Kidneys	Liver	Heart	Lungs	Pancreas	Stomach/ Intestines
Australia	Requested	658 (616)	295 (282)	236 (250)	594 (540)	264 (257)	39 (55)
	Consent Given	656 (610)	295 (280)	227 (241)	586 (536)	259 (252)	34 (49)
	Retrieved	605 (570)	200 (192)	66 (81)	308 (243)	76 (113)	0 (1)
	Recipients Transplanted	570 (548)	213 (204)	66 (68)	306 (236)	(+35) (+46)	0 (1)
New Zealand	Requested	76 (82)	37 (40)	28 (33)	58 (64)	29 (26)	0 (0)
	Consent Given	76 (82)	37 (40)	28 (33)	58 (64)	29 (26)	0 (0)
	Retrieved	66 (62)	30 (32)	12 (11)	26 (24)	4 (3)	0 (0)
	Recipients Transplanted	61 (52)	30 (34)	12 (11)	26 (24)	3 (3)	0 (0)
Kidneys and lungs are counted as separate organs + Includes (12) 2010 and (9) 2011 pancreas islet transplants							

ORGANS REQUESTED

The requests for specific organs in Australia in 2011 from 337 organ donors were: kidneys 97.6%, liver 87.5%, heart 70%, lungs 88.1% and pancreas 78.3%.

From the 38 New Zealand donors in 2011, the requests for specific organs were: kidneys 100%, liver 97.4%, heart 73.7%, lungs 76.3% and pancreas 76.3%.

MULTIPLE ORGAN RETRIEVAL

There were 89 (26.5%) of Australian donors in 2011 who donated solid organs, who had a single organ retrieved, shown in Figure 49. Kidney only donation occurred in 74 cases.

Eight donors in Australia went to theatre, but no solid organs were retrieved.

New Zealand had four single organ donors in 2011, three donating kidneys and one donating a liver.

In Australia 71% (240) donors and in New Zealand 82% (31) donors had two or more organs retrieved for the purpose of transplantation

Figure 49

Multiple Organ Retrieval 2006 - 2011												
Number of Organs	Australia						New Zealand					
	2006	2007	2008	2009	2010	2011	2006	2007	2008	2009	2010	2011
Single	11%	15.5%	17%	17%	19%	26.5%	8%	16%	19%	16%	22%	11%
Two	23%	23%	23%	20%	32%	29%	24%	40%	23%	35%	29%	26%
Three	23%	23%	25%	27%	20%	22%	44%	26%	39%	33%	29%	42%
Four	23%	20%	20%	19%	18%	13.5%	12%	18%	16%	9%	12%	13%
Five	18%	15.5%	14%	14%	9%	7%	12%	0%	3%	2%	0%	0%
No organs	>1%	3%	1%	3%	2%	2%	0%	0%	0%	5%	7%	8%

Figure 50

State by State Comparison of Multiple Organ Retrieval 2011										
Number of Organs	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
Single	12 (18%)	16 (21%)	2 (25%)	33 (31%)	2 (33%)	11 (32%)	1 (25%)	12 (36.5%)	89 (26.5%)	4 (11%)
Two	31 (46%)	26 (34%)	3 (37.5%)	25 (23%)	1 (17%)	4 (11%)	0 (0%)	7 (21%)	97 (29%)	10 (26%)
Three	10 (15%)	14 (18%)	1 (12.5%)	28 (26%)	1 (17%)	10 (29%)	2 (50%)	9 (27.5%)	75 (22%)	16 (42%)
Four	10 (15%)	9 (12%)	1 (12.5%)	15 (14%)	1 (17%)	5 (14%)	1 (25%)	3 (9%)	45 (13.5%)	5 (13%)
Five	2 (3%)	8 (10%)	1 (12.5%)	4 (4%)	1 (17%)	5 (14%)	0 (0%)	2 (6%)	23 (7%)	0 (0%)
No organs	2 (3%)	4 (5%)	0 (0%)	2 (2%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (2%)	3 (8%)
Total	67	77	8	107	6	35	4	33	337	38

NB: 2 kidneys = 1 organ, 2 lungs = 1 organ
On occasions when only one kidney is retrieved, this is also defined as one organ

ORGANS TRANSPLANTED

In 2011 Australia and New Zealand had 3.1 organs per donor used for transplantation (Figure 51).

The number of organs transplanted per donor each year for 2003-2011 in Australia and New Zealand is shown in Figure 52.

The number of recipients transplanted per donor in Australia in 2011 was 3.0 the same as 2010.

In 2011, Tasmania had the highest number of organs transplanted; 3.5 per donor, followed by the Australian Capital Territory, 3.4, Western Australia and Queensland both 3.2, New South Wales, 3.1 and Victoria, South Australia and the Northern Territory all 3.0.

These figures include pancreas islets transplants but exclude tissue transplantation.

Figure 51

Organs Transplanted per Donor 2011										
	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
No. Organs Transplanted	212	239	27	322	21	104	12	104	1041	119
No. of Donors	67	77	8	107	6	35	4	33	337	38
Mean per Donor	3.2	3.1	3.4	3.0	3.5	3.0	3.0	3.2	3.1	3.1

Double Lungs = one organ

Figure 52

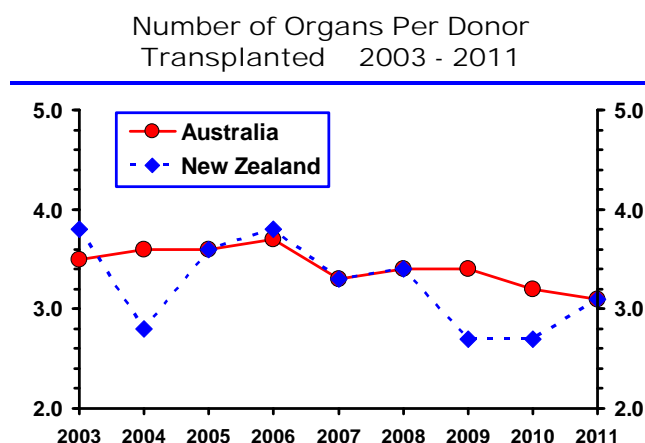


Figure 53

Organs Transplanted by Donor State in Australia and New Zealand 2011										
Organs Transplanted	QLD	NSW	ACT	VIC	TAS	SA	NT	WA	AUST	NZ
Kidney	119	129	14	177	11	55	6	59	570	61
Liver	37	48	7	44	3	22	2	20	183	30
Liver (Left)	7	4	0	5	0	0	0	0	16	0
Liver (Right)	6	3	0	5	0	0	0	0	14	0
Heart	15	12	2	20	1	6	1	7	64	12
Heart/Lungs	1	0	0	0	0	1	0	0	2	0
Double Lungs	23	30	3	57	2	14	3	13	145	13
Lung (Left)	0	1	0	3	1	1	0	1	7	0
Lung (Right)	1	1	0	2	0	0	0	1	5	0
Pancreas	3	7	1	6	2	4	0	3	26	3
Pancreas Islets	0	4	0	3	1	1	0	0	9	0
Intestines	0	0	0	0	0	0	0	0	0	0
Total	212	239	27	322	21	104	12	104	1041	119

Australia - Appendix I - Page 53 (Organs Donated from Australia - Transplanted in Australia or New Zealand)
New Zealand - Appendix II - Page 20 (Transplanted Solid Organs from NZ Donors - Transplanted in NZ or Australia)

EXCHANGE OF ORGANS

Figure 54 shows the number of organs that were sent and received between Australian States and New Zealand in 2011 and 2010

Figure 54

Exchange of Organs Between States and New Zealand 2011 (2010)										
Organs Transplanted	Exchange	Kidneys	Liver ⁺	Heart	Heart/Lungs ^x	Lungs #	Pancreas	Islets	Intestines	Total [*]
Queensland	Sent	17 (10)	11 (8)	9 (9)	0 (0)	17 (13)	3 (1)	0 (3)	0 (0)	57 (44)
	Received	17 (10)	3 (7)	4 (1)	0 (0)	16 (6)	0 (0)	0 (0)	0 (0)	40 (24)
New South Wales	Sent	27 (23)	5 (7)	2 (3)	0 (0)	10 (14)	1 (2)	0 (0)	0 (0)	45 (49)
	Received	42 (49)	20 (20)	14 (13)	0 (0)	36 (27)	13 (7)	0 (5)	0 (0)	125 (121)
ACT	Sent	14 (18)	7 (10)	2 (1)	0 (0)	6 (5)	1 (1)	0 (1)	0 (0)	30 (36)
Victoria	Sent	10 (14)	12 (8)	6 (3)	0 (0)	8 (2)	2 (1)	0 (3)	0 (0)	38 (31)
	Received	27 (30)	12 (10)	8 (8)	1 (1)	37 (29)	3 (4)	1 (0)	0 (1)	91 (85) *
Tasmania	Sent	11 (17)	3 (7)	1 (2)	0 (0)	5 (4)	2 (2)	1 (1)	0 (1)	23 (34)
South Australia	Sent	8 (9)	4 (3)	6 (4)	1 (1)	29 (22)	4 (3)	1 (0)	0 (0)	55 (44) *
	Received	11 (10)	7 (4)	0 (0)	0 (0)	0 (0)	0 (0)	1 (3)	0 (0)	19 (17)
Northern Territory	Sent	6 (4)	2 (2)	1 (0)	0 (0)	6 (2)	0 (0)	0 (0)	0 (0)	15 (8)
Western Australia	Sent	7 (14)	8 (2)	0 (1)	0 (0)	4 (0)	3 (1)	0 (0)	0 (0)	22 (18)
	Received	3 (12)	4 (5)	2 (1)	0 (0)	2 (6)	0 (0)	0 (0)	0 (0)	11 (24)
New Zealand	Sent	0 (2)	1 (5)	1 (0)	0 (0)	6 (6)	0 (0)	0 (0)	0 (0)	8 (13)
	Received	0 (0)	7 (6)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	7 (6)

+ Number of recipients of livers x Number of sets of Heart/Lungs (not counted under heart or lungs)
Total number of lungs (not recipients) excludes heart/lungs * Total includes a heart and two lungs from each heart/lungs transplant

Figure 55

Summary of Organs Transplanted in Australia from New Zealand Donors 1989 - 2011						
Year	Kidneys	Liver ⁺	Heart	Heart/Lung ^x	Lungs #	Total [#]
1989	0	1	0	0	0	1
1990	0	7	0	0	0	7
1991	0	11	0	0	0	11
1992	3	24	0	0	0	27
1993	0	16	0	0	0	16
1994	4	21	0	0	2	27
1995	0	21	5	0	9	35
1996	1	23	1	0	4	29
1997	2	22	1	1	0	28
1998	4	16	3	0	8	31
1999	2	7	1	0	2	12
2000	0	7	0	0	4	11
2001	0	2	0	0	4	6
2002	0	5	2	0	8	15
2003	0	5	3	0	13	21
2004	1	7	2	0	4	14
2005	4	5	3	0	5	17
2006	0	8	1	0	5	14
2007	0	8	3	0	8	19
2008	0	2	2	0	4	8
2009	0	5	0	0	16	21
2010	2	5	0	0	6	13
2011	0	1	1	0	6	8
Total	23	229	28	1	108	391

+ Number of recipients of livers
x Number of sets of Heart/Lungs (not counted under heart or lungs)
Total number of lungs (not recipients) excludes heart/lungs
* Total includes a heart and two lungs from each heart/lungs transplant

New Zealand organs are sent to Australia when there are no suitable recipients in New Zealand.

Liver transplantation commenced in New Zealand in February 1998, prior to this time, all livers were sent to Australia.